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ABSTRACT

This study examined children's attention to formal features and other attributes during television viewing. Subjects were 40 children, ages 2, 5, 8 and 11 years old, who were videotaped watching television at home during a 10-day period. Among other attributes, children's visual attention to television was coded, along with television program attributes including movement, cuts, animation, text, nonhuman characters, men, women, and children. Also coded were two content-related features: purposeful action by a character (other than talking) and violence. Analysis revealed that the children's attention increased significantly in the presence of movement, animation, cuts, purposeful action, violence, and nonhuman characters. Attention was depressed in the presence of text and adult human characters. (MM)

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ED 362 272

Children's Visual Attention to Formal Features of Television at Home

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Abstract

Prior laboratory based research indicates that certain formal features of television are reliably associated with enhanced or depressed attention. The present research analyzes attention to formal features during TV viewing as it occurred naturally at home. Forty two- to eleven- year old children from different families were observed by means of automated video observation for 10 days. Children attended significantly more in the presence than the absence of movement, animation, cuts, purposeful action, violence, and nonhuman characters. Attention was depressed in the presence of text, and adult human TV characters.

Introduction

While prior research has shown that much of children's attention to TV is driven by comprehension and appreciation of content, several studies have shown that visual attention is also related to the occurrence of attributes uniquely characteristic of television. These attributes, called "formal features", can be described without specific reference to thematic content. They include the presence or absence of movement, animation, cuts, text, or types of characters, such as men or women. The prior research has found that, in children 3 to 10 years of age, attention is depressed in the presence of men, neutral in the presence of women, and enhanced by animation, movement, children, and nonhuman characters (e.g. puppets; Alwitt et al. 1980; Anderson & Levin, 1976; Calvert et al., 1982). The effects of some formal features, such as animation and cuts, were found to be diminished in children under 3 years of age (Levin & Anderson, 1976). All the prior research was done in laboratory settings using relatively small amounts of children's programming.

This study extends the prior laboratory research by examining attention to formal features and other attributes during television viewing as it occurred over 10 days in the home.

Method

Subjects were 2- 5- 8- and 11-year-old children (10 at each age, equally divided by sex) who were videotaped at home over 10 days. The observation procedure involved time-lapse video equipment (recording at approximately 1 frame/sec) which automatically began recording when the TV set was turned on and stopped recording when the TV set was turned off. One camera with a wide angle lens shot the viewing area and another shot the TV screen. Nearly all the children's TV viewing at home was thus recorded. Detailed descriptions of data collection are available in Anderson et al. (1985).

Videotapes were time-sampled by means of a computer-controlled coding system every 5 minutes of cumulative time the child spent in the viewing room. Among other behaviors, the child's visual attention to the TV was coded, along with TV program attributes including movement, cuts (within 6 seconds prior to sample), animation, text, nonhuman characters, men, women, and children. Also coded were two content related features: purposeful action by a character (other than talking), and violence.

Results and Discussion

The analyses were multivariate ANOVAs for each attribute with percent visual attention as the dependent variable. The design for each MANOVA was 4 (age) by 2 (sex) by 2 (presence versus absence). See Table 1 for significant results. These analyses exactly parallel those reported in prior research. Also reported are 4 (age) by 2 (sex) ANOVAs for percent occurrence of the attributes while the children were present in the viewing room (see Table 2). Means are plotted in the accompanying figures.

Results for formal features strongly replicate laboratory studies. Significant ($p<.05$) enhanced attention was found for movement, cuts, animation, and nonhumans. Depressed attention was found to adult male TV characters, adult female TV characters, and text. Age by attribute interactions were found for child TV characters, adult male TV characters, and text. There was only one interaction with sex of subjects, due to girls attention being less depressed in the presence of adult female TV characters than boys attention. Percent exposure significantly increased with age for movement, animation, adult male, and adult female characters.

For the content related attributes, attention was enhanced in the presence of violence and purposeful behavior. There was surprisingly little violence coded. Nearly all the analyses showed main effects of age, reflecting overall increases in attention to television as found in prior research.

The present results, obtained from the home environment and including nearly all the TV content to which the children were exposed during the 10 days, largely confirm the findings of the laboratory studies. The study also adds new information about attention to character behavior and violence as well as the actual exposure of children to formal features and attributes of television.

References

Alwitt, L. F., Anderson, D. R., Lorch, E. P., and Levin, S. R. (1980). Preschool children's visual attention to attributes of television. Human Communication Research, 7, 52 - 67.

Anderson, D. R., Collins, P. A., Field, D. E., Lorch, E. P., Nathan, J.G. (1985). Estimates of young children's time with television: A methodological comparison of parent reports with time-lapse video home observation. Child Development, 56, 1345 - 1357.

Anderson, D. R. and Levin, S. R. (1976). Young children's attention to *Sesame Street*. Child Development, 47, 806 - 811.

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Table 1

SUMMARY OF ATTRIBUTE ANALYSES

Attribute Name	Main Effect Presence vs. Absence[a]	Interaction with Age[b]	Interaction with Sex[a]	Interaction with Age and Sex[b]
Action	4.65**	n.s.	n.s.	n.s.
Human Character:				
Adult Male	20.87**	3.53*	n.s.	n.s.
Adult Female	n.s.	n.s.	6.12*	n.s.
Child	n.s.	2.94*	n.s.	n.s.
Cuts	11.18**	n.s.	n.s.	n.s.
Format	66.74**	n.s.	n.s.	n.s.
Movement	27.30**	n.s.	n.s.	n.s.
Nonhuman	4.93*	n.s.	n.s.	n.s.
Text	n.s.	6.73**	n.s.	n.s.
Violence	9.876**	n.s.	n.s.	n.s.

* $p < .05$
** $p < .001$

[a] F ratio based on 1,32 degrees of freedom.
[b] F ratio based on 3,32 *df.*

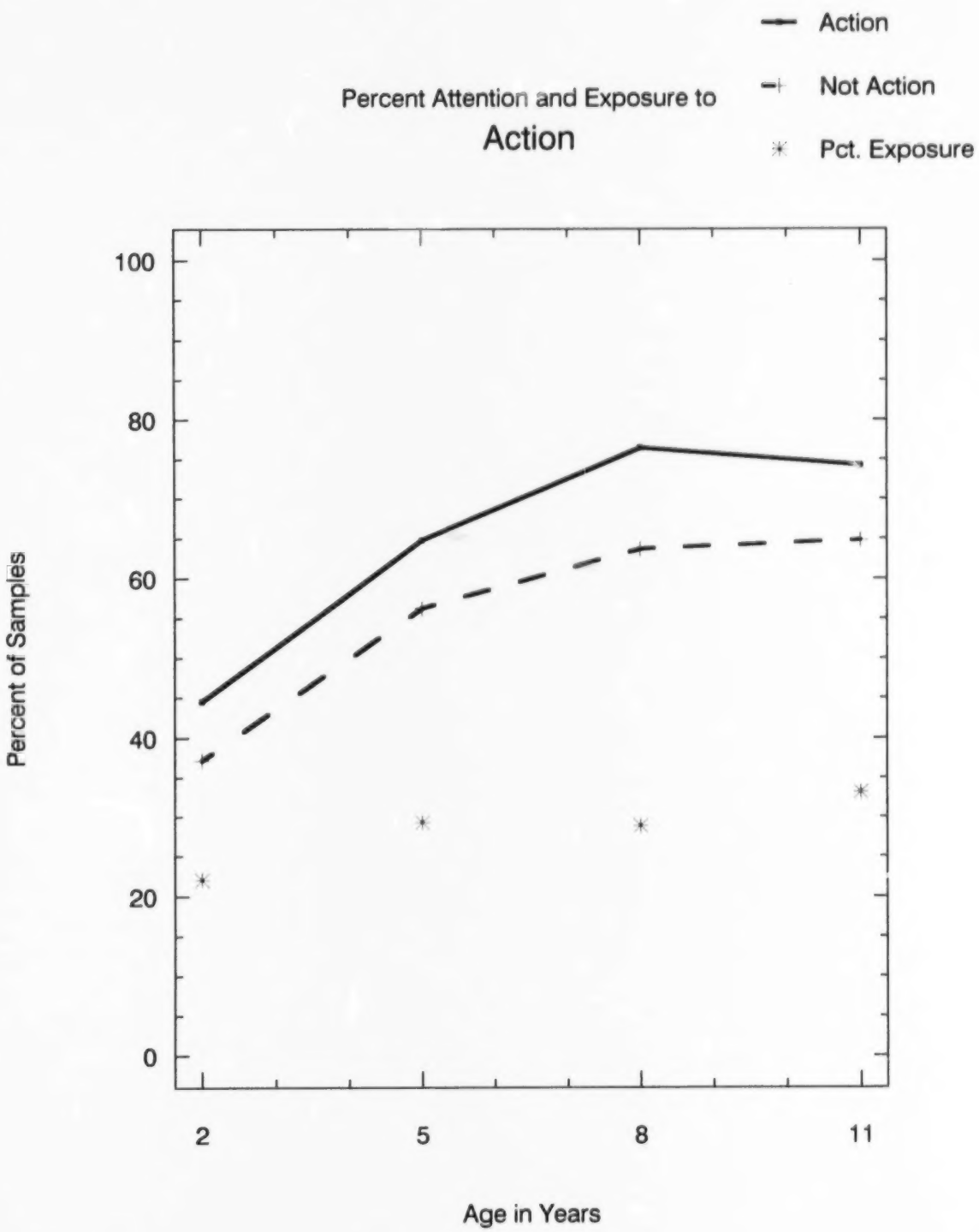
Table 2

SUMMARY OF EXPOSURE ANALYSES

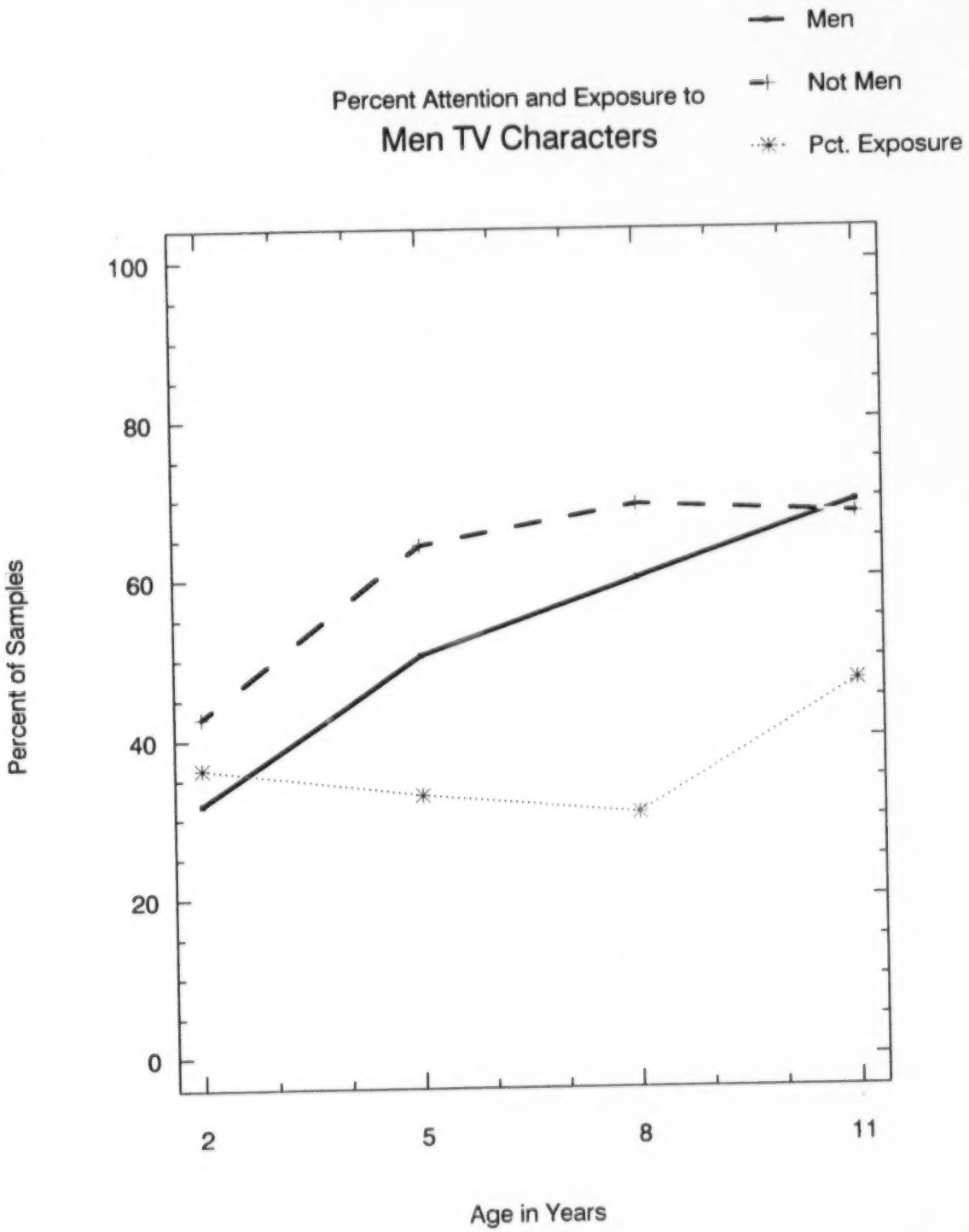
Attribute Name	Age[a]	Sex[b]	Age*Sex
Action	3.82**	n.s.	n.s.
Human Character:			
Adult Male	8.21**	6.74*	n.s.
Adult Female	5.26**	5.86*	n.s.
Child	n.s.	n.s.	n.s.
Cuts	n.s.	n.s.	n.s.
Format	5.13**	7.23*	n.s.
Movement	6.93**	n.s.	n.s.
Nonhuman	n.s.	n.s.	n.s.
Text	n.s.	n.s.	n.s.
Violence	n.s.	n.s.	n.s.

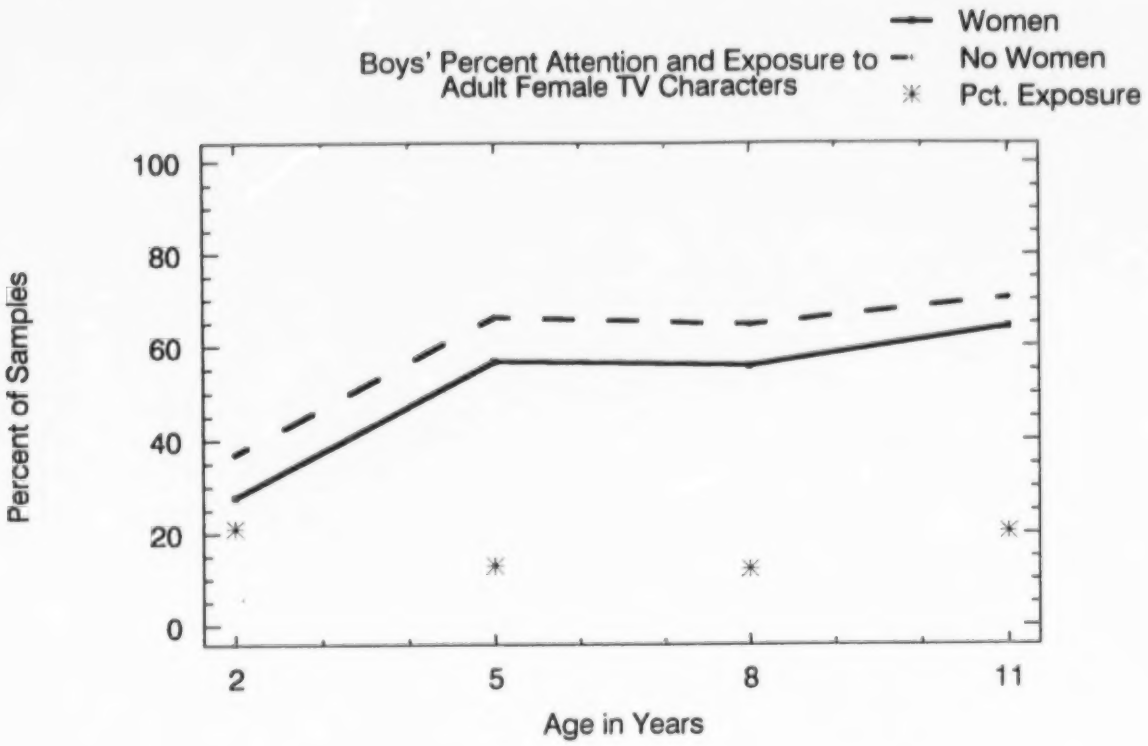
* $p < .05$
** $p < .001$

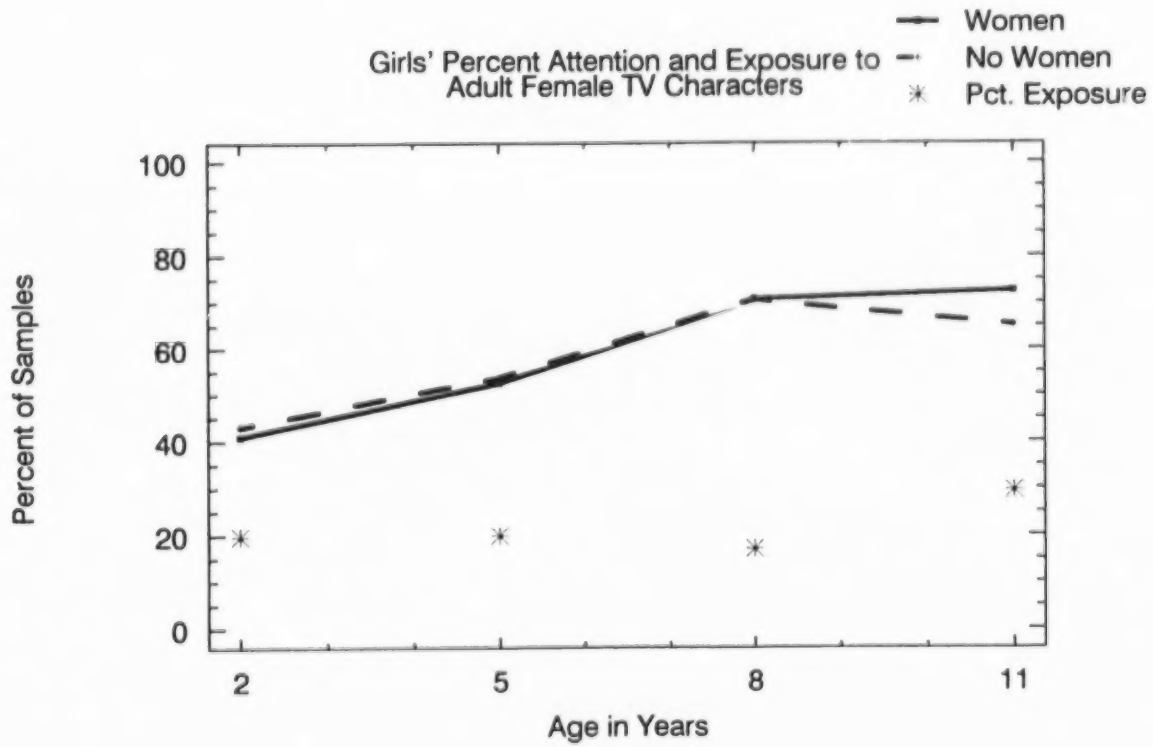
[a] F ratio based on 3, 32 degrees of freedom.
[b] F ratio based on 1, 32 *df.*

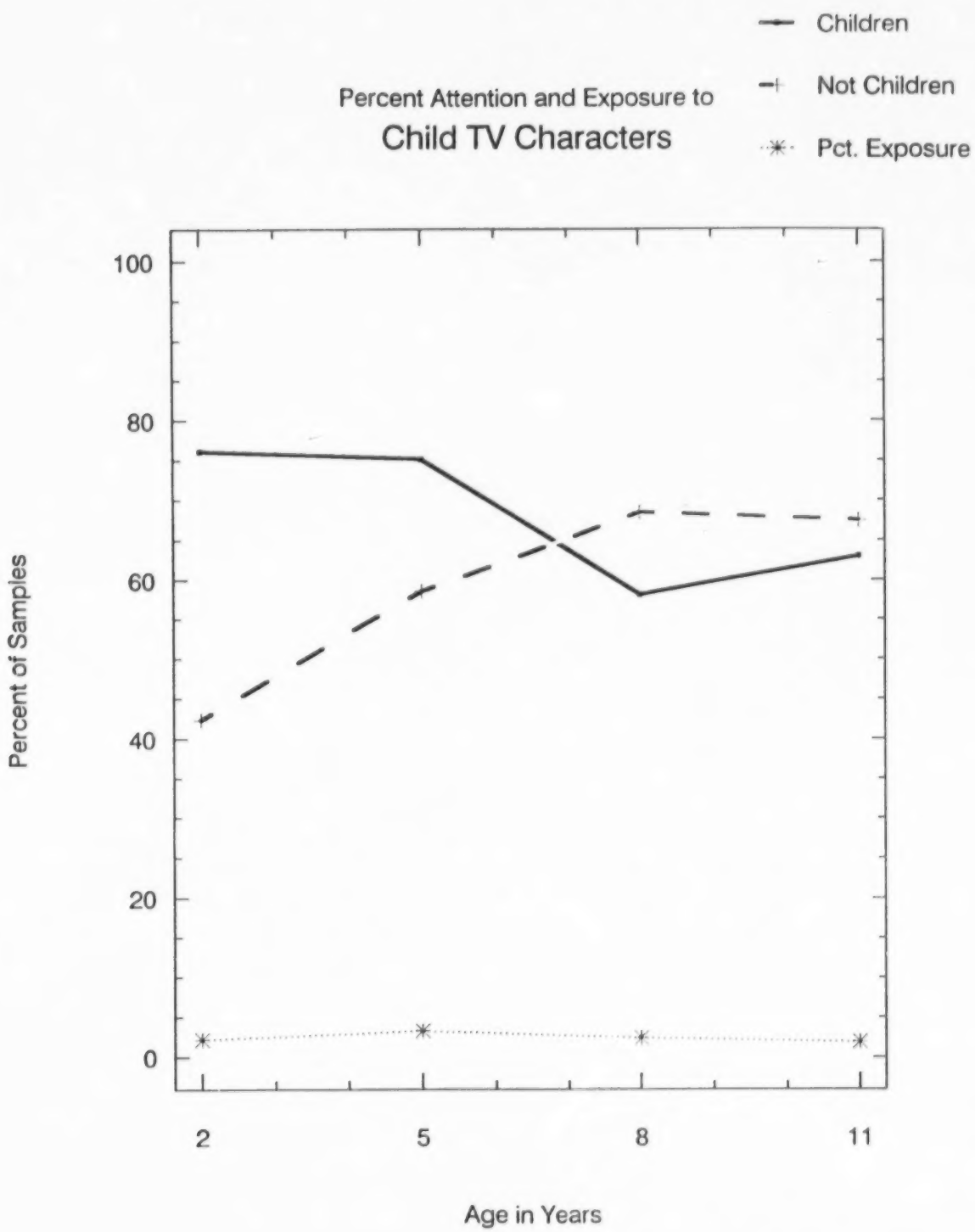


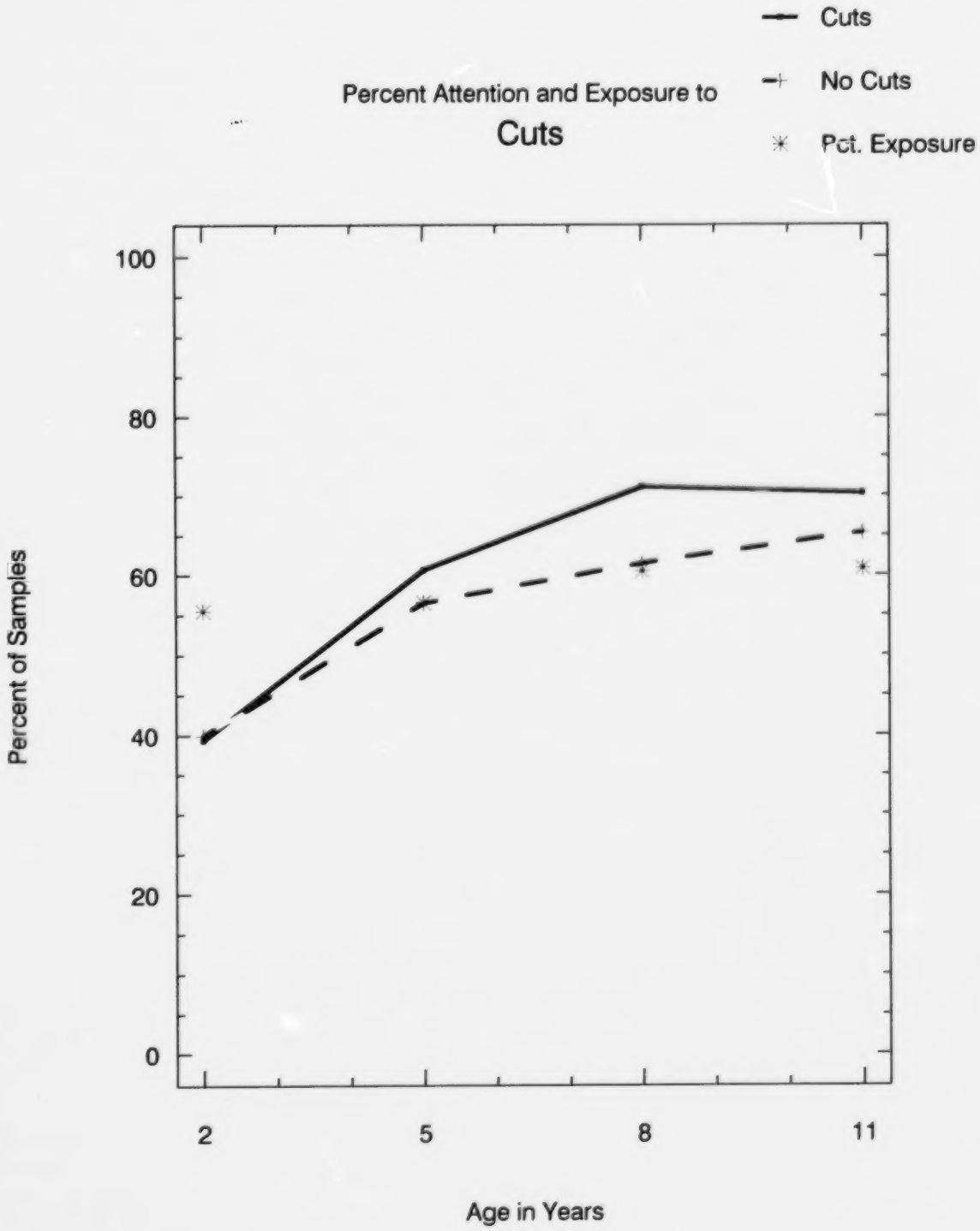
Purposeful overt behavior (not talking)


Men
Not Men
Pct. Exposure
Percent Attention and Exposure to
Men TV Characters
100
80
60
40
20
0
Percent of Samples
2
5
8
11
Age in Years

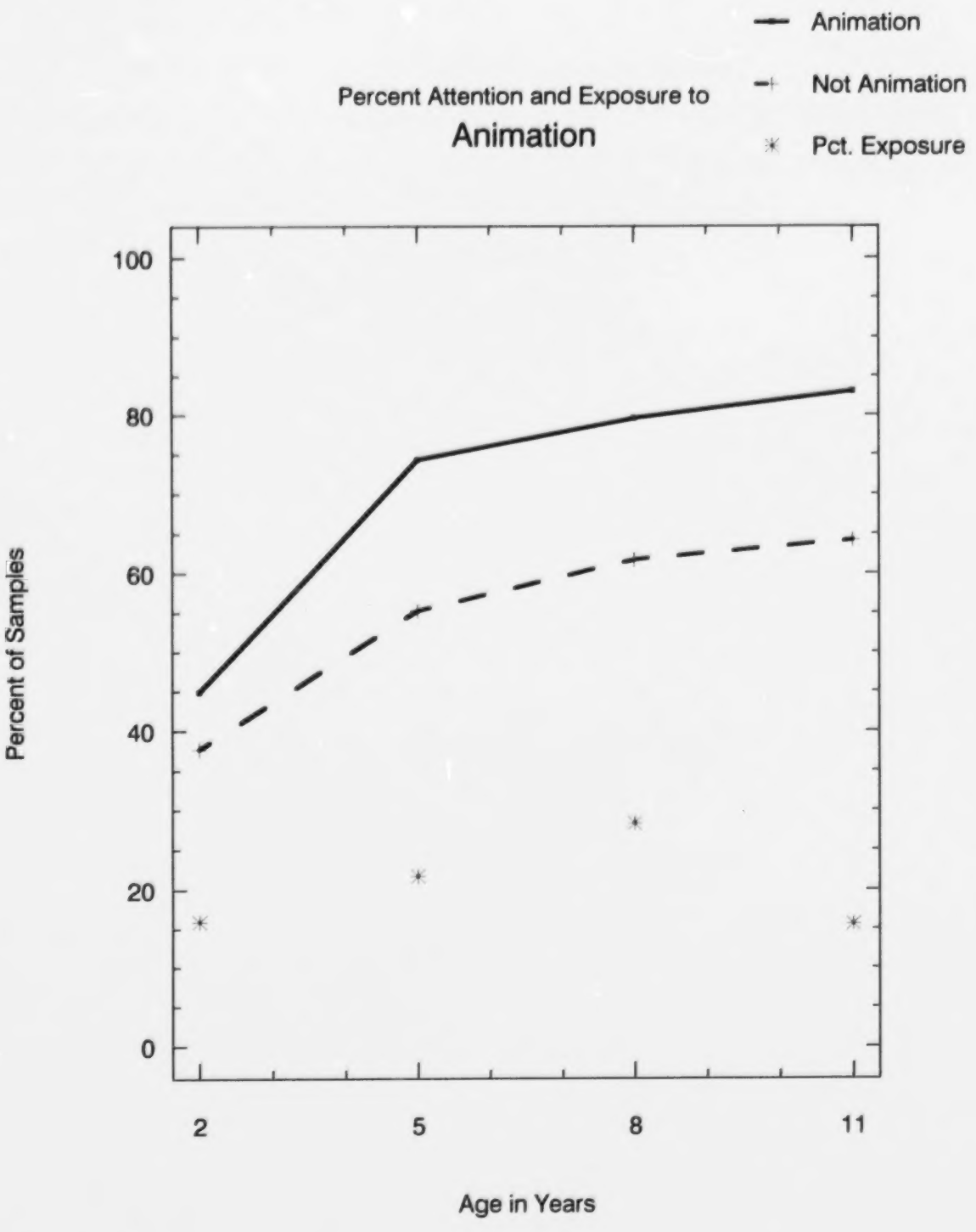

Boys' Percent Attention and Exposure to Adult Female TV Characters
Women
No Women
Pct. Exposure
Percent of Samples
100
80
60
40
20
0
2
5
8
11
Age in Years

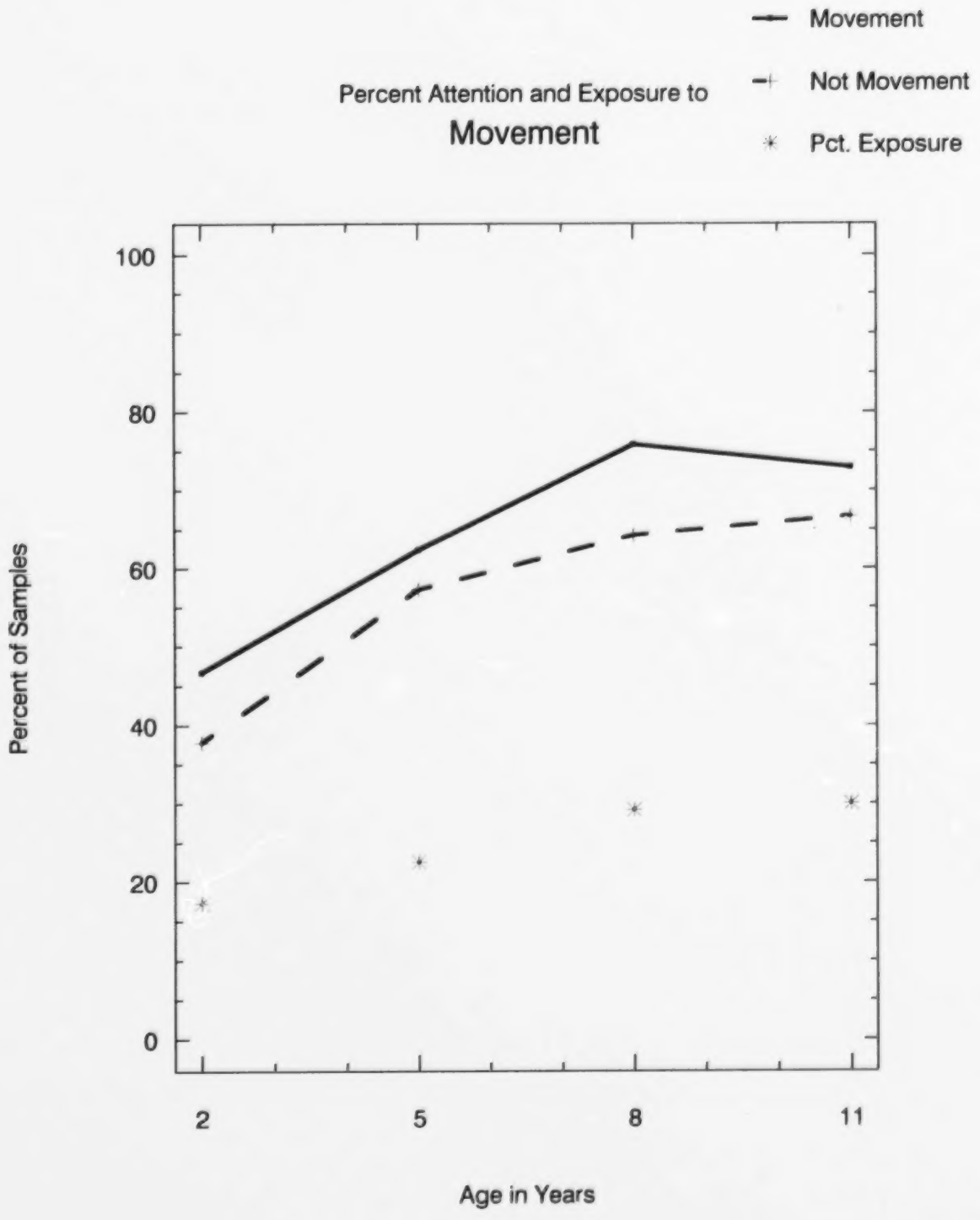

Girls' Percent Attention and Exposure to Adult Female TV Characters
Women
No Women
Pct. Exposure
Percent of Samples
100
80
60
40
20
0
2
5
8
11
Age in Years


Children
Not Children
Pct. Exposure
Percent Attention and Exposure to
Child TV Characters
100
80
60
40
20
0
Percent of Samples
2
5
8
11
Age in Years

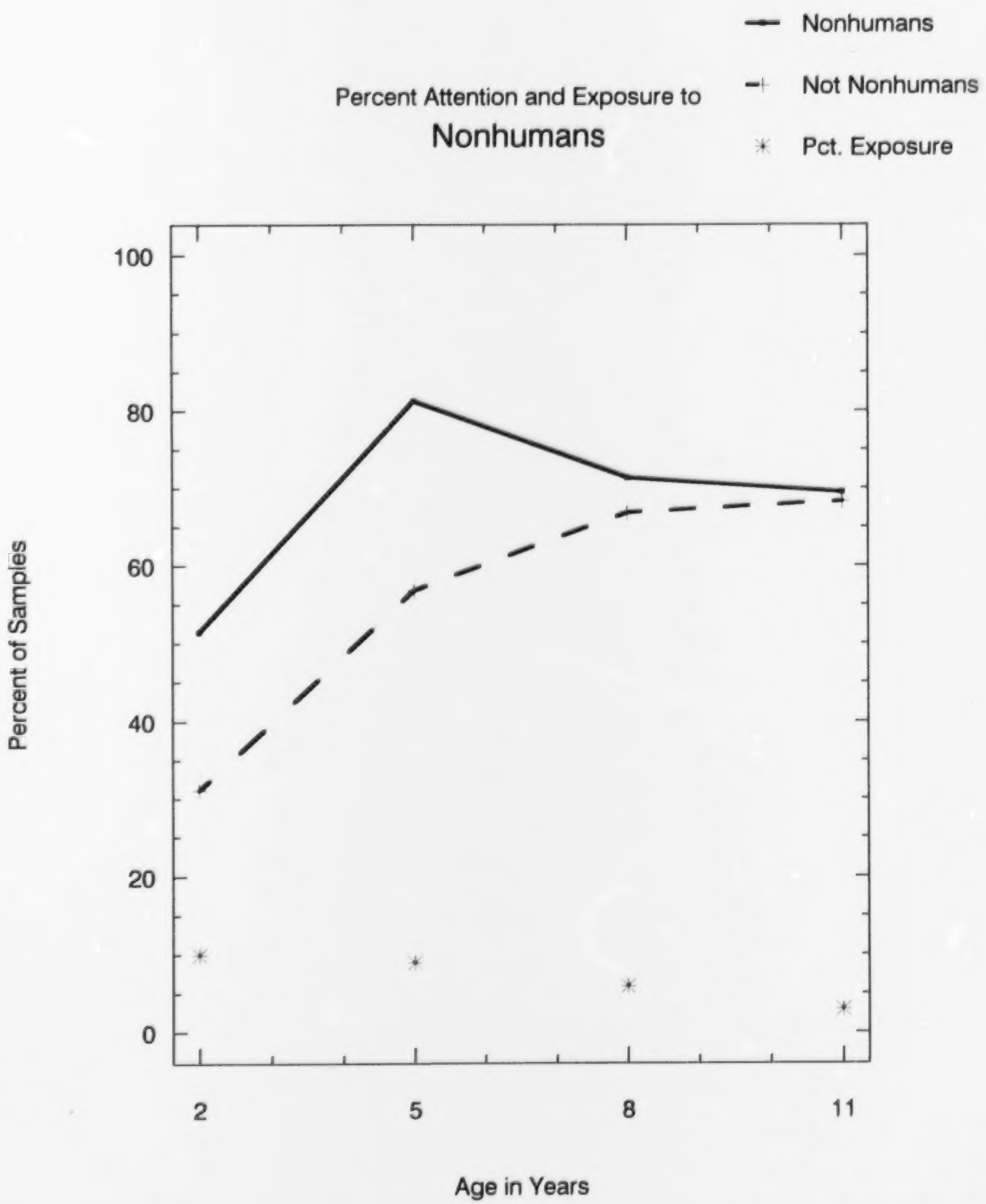


At least one cut in prior 6 seconds

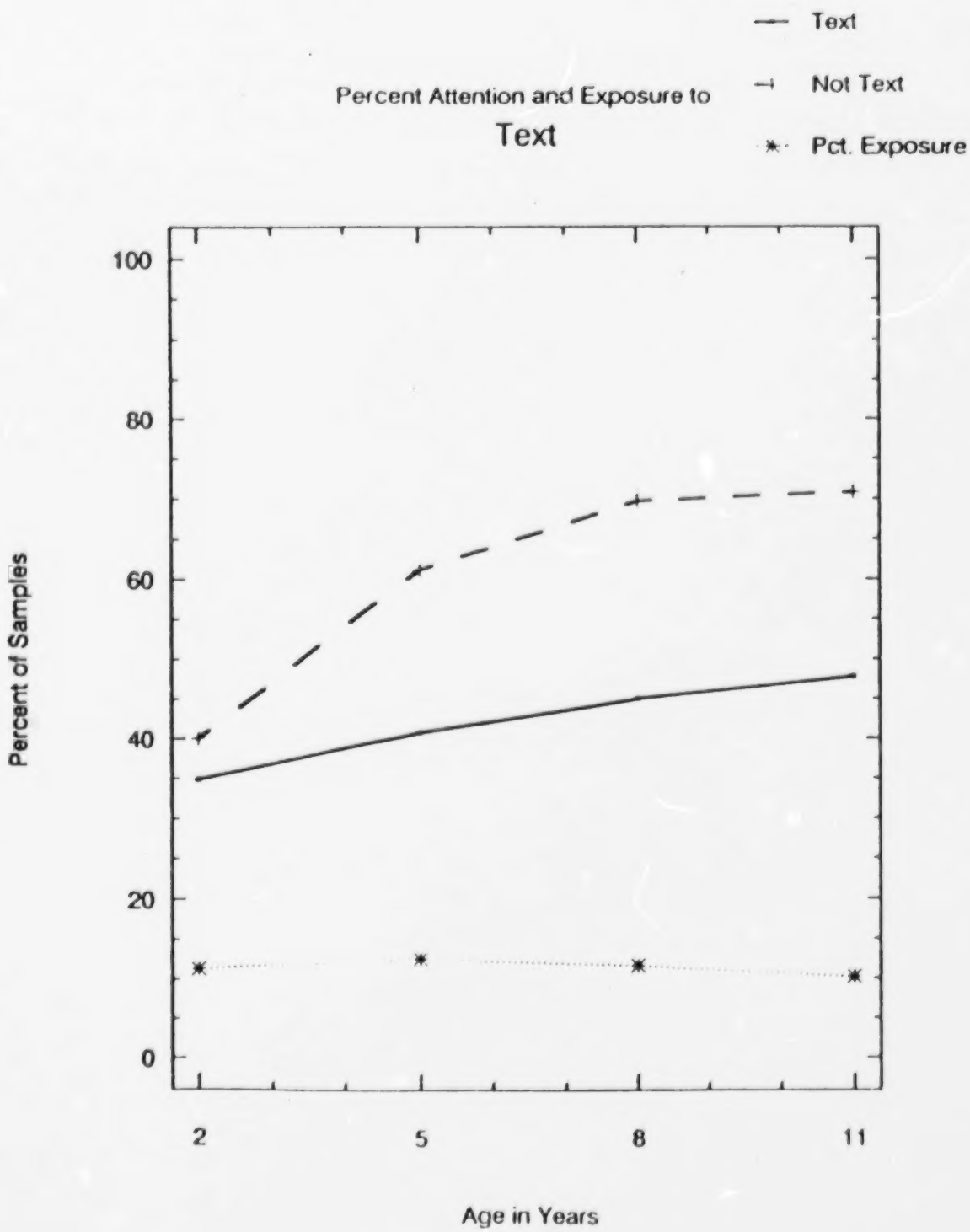

Animation
Not Animation
Pct. Exposure
Percent Attention and Exposure to
Animation
100
80
60
40
20
0
Percent of Samples
2
5
8
11
Age in Years

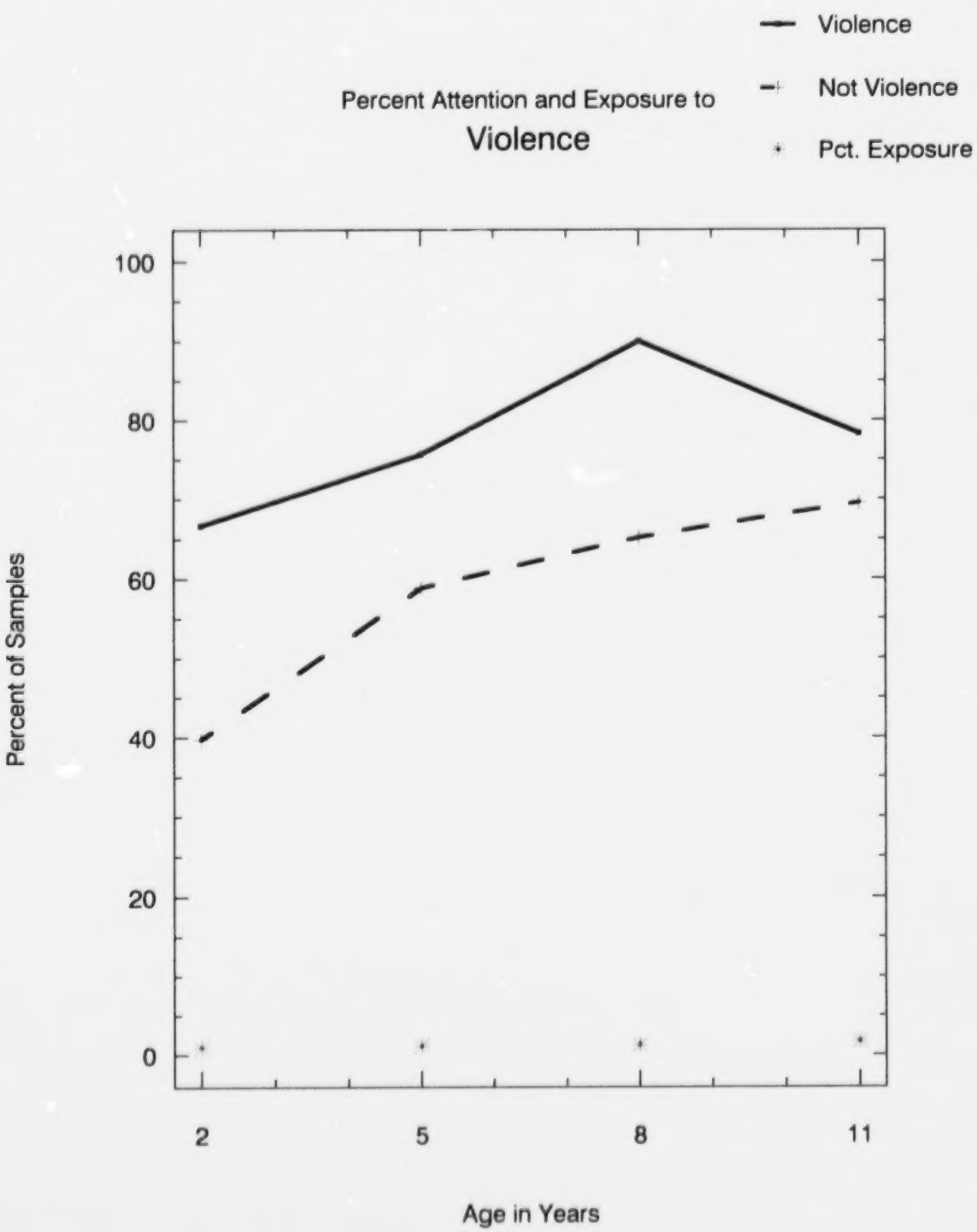


Character or object moving through space



Includes puppets, robots, animals, etc.


Text
Not Text
Pct. Exposure
Percent Attention and Exposure to
Text
100
80
60
40
20
0
Percent of Samples
2
5
8
11
Age in Years


Violence
Not Violence
Pct. Exposure
Percent Attention and Exposure to
Violence
100
80
60
40
20
0
Percent of Samples
2
5
8
11
Age in Years